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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,852	01/30/2004	Roderick A. Barman	P388 0008	3901

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EXAMINER	
CHEN, TSE W	

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,852	BARMAN ET AL.	
	Examiner	Art Unit	
	Tse Chen	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7,9,12,14-16,18-26 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,9,12,14-16,18-26 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10182004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-18 and 22-29 in the reply filed on July 20, 2006 is acknowledged. The traversal is on the ground(s) that claim 1 is generic to claim 19. With further consideration, Examiner withdraws the restriction of Group I and Group II [claims 19-21].

2. Applicant's election with traverse of species a [claim 4] and species c [claims 7 and 24] in the same reply is acknowledged. The traversal is on the ground(s) that the species within each group are not mutually exclusive. This is not found persuasive because the species are still *distinct* within their respective groups due to their different functionalities. The requirement is still deemed proper and is therefore made FINAL.

3. Applicant's election without traverse of species g, i, and k [claims 12, 16 and 26] in the same reply is acknowledged.

4. Claims 1-4, 6-7, 9, 12, 14-16, 18-26, 29 are presented for examination.

Drawings

5. The drawings are objected to because the unlabeled rectangular box(es) shown in the drawings should be provided with descriptive text labels.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "calculating a first order time derivative"; "configured to begin an operational cycle according to a rule based on timing information of the first bus"; "cameras adjust their timing by selectively reading an adjustable amount of extra data for each frame"; "automatically broadcasting timing information on the first

and second buses"; "a bandwidth of the one or more devices on the first bus plus a bandwidth of the one or more devices on the second bus exceeds a maximum allowable bandwidth of either of the first or second buses" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 2 and 18 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The claims are directed towards "a method of

synchronizing one or more devices on a first bus with one or more devices on a second bus, the method comprising: (a) taking a first time measurement for the first bus; (b) taking a time measurement for the second bus; (c) taking a second time measurement for the first bus; (d) calculating an average of the first and second time measurements for the first bus; (e) subtracting the time measurement for the second bus from the average to determine a timing offset between the first bus and the second bus". Assuming an already synchronized instance between the devices on their buses [i.e., actual offset would be zero]: (a) first time of first bus measured at 1 sec; (b) time of second bus measured at 3 sec; (c) second time of first bus measured at 7 sec; (d) average of first bus is 4 sec; (e) offset would be calculated as 4-3 = 1 sec instead of expected 0 sec. Thus, the calculated offset would be erroneous and the claimed synchronization would not be operative.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 2 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As discussed above, the claimed method of synchronization is inoperative. Furthermore, the specification does not provide any working examples or details of how one skilled in the art to which it pertains can derive the proper offset to synchronize the devices. As such, Examiner submits that one skilled

in the art to which it pertains would require undue experimentation to come up with a way to utilize the calculated offset as claimed in order to synchronize the devices.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant did not specifically identify the particular version of IEEE 1394 compatible with the claimed buses [e.g., 1394-1995, 1394a-2000, 1394b-2002]. Examiner submits that different versions inherently have different characteristics [e.g., system requirements, performance] that would affect the scope of the claims. Prior art is still applied in the following rejections.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-2, 6-7, 14-16, 19-21, 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamanaka et al., US Patent 4807259, hereinafter Yamanaka.

14. In re claim 1, Yamanaka discloses a method of synchronizing one or more devices on a first bus [associated with master] with one or more devices on a second bus [associated with slaves] [fig.3], the method comprising:

- Acquiring timing information [e.g., TM, TS] from the first bus and the second bus [col.7, ll.6-32].
- Determining a timing offset [TD] between the first bus and the second bus [col.7, ll.24-40].
- Broadcasting the timing offset to the one or more devices on the second bus so that the one or more devices on the second bus can adjust their timing to be synchronized with the one or more devices on the first bus [col.7, ll.34-49].

15. As to claim 2, Yamanaka discloses, wherein acquiring timing information from the first bus and the second bus comprises: taking a first time measurement [TM] for the first bus; taking a time measurement [TS] for the second bus; and, taking a second time measurement [TDE] for the first bus [col.7, ll.6-25]; and wherein determining the timing offset comprises: calculating an average [TM + t1] of the first and second time measurements for the first bus; and subtracting the time measurement for the second bus from the average [col.7, l.40].

16. As to claims 6, 20, 23, Yamanaka discloses, wherein the one or more devices on the first and second buses are each configured to begin an operational cycle according to a rule based on timing information of the first bus [col.1, ll.24-55; measurement at predetermined time in synch with master].

17. As to claims 7, 21, 24, Yamanaka discloses, wherein the one or more devices on the second bus adjust their timing by determining timing information of the first bus by applying the timing offset to the timing information of the second bus [col.7, ll.42-47].

18. As to claim 14, Yamanaka discloses, comprising respectively associating first [17] and second [27, 37] clocks with the first and second buses for generating timing information for the first and second buses.

19. As to claim 15, Yamanaka discloses, comprising automatically broadcasting timing information on the first and second buses [col.7, l.62 – col.8, l.2; automatically after adequate timing].

20. As to claim 16, Yamanaka discloses, wherein the method is carried out on a data processor [1] comprising first and second interfaces [part of 18] coupled to the first and second buses, respectively, and wherein acquiring timing information from the first bus and the second bus comprises querying the first and second interfaces for the timing information [col.7, ll.6-25; 18 inherently uses some interface in the broadest interpretation to access master and slave times].

21. In re claim 19, Yamanaka discloses each and every limitation as discussed above in reference to claim 1 [i.e., separate master bus corresponds to the first bus of claim 1 and first and second buses corresponds to the second bus of claim 1].

22. In re claim 22, Yamanaka discloses each and every limitation as discussed above in reference to claims 1 and 16. Yamanaka discloses the apparatus [fig.3] comprising:

- A processing element [10] coupled to the first and second interfaces to receive timing information for the first and second buses.
- A program memory coupled to the processing element, the program memory containing software instructions programmed to cause processing element to calculate a timing offset between the first bus and the second bus and broadcast the timing offset to the one

or more devices on the second bus by means of the second interface [inherently, some memory is required to store the instructions in order for 10 to perform accordingly].

23. In re claim 25, Yamanaka discloses, wherein a bandwidth of the one or more devices on the first bus plus a bandwidth of the one or more devices on the second bus exceeds a maximum allowable bandwidth of either of the first or second buses [inherently, the sum of two positive elements would exceed the individual element].

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

25. Claims 3-4, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka as applied to claims 1, 2 above, and further in view of Baker, US Patent 6650719.

26. Yamanaka taught each and every limitation as discussed above. Yamanaka did not disclose calculating a drift rate of the timing offset.

27. In re claims 3 and 18, Baker discloses a method comprising calculating a drift rate of the timing offset and broadcasting the drift rate along with the timing offset [col.1, ll.12-49].

28. In re claim 4, Baker discloses, wherein calculating the drift rate comprises calculating a first order time derivative [col.1, ll.34-49].

29. In re claim 18, Yamanaka discloses, storing the timing offset [col.7, ll.42-47] and repeating synchronization steps [col.8, ll.3-19]. Baker discloses, if at least two timing offsets have been stored, calculating a drift rate based at least in part on a difference between two of the

stored offsets and a time elapsed between when the two stored offsets were determined, otherwise setting the drift rate to zero [col.1, ll.34-49; derivative of zero coefficient would be zero].

30. It would have been obvious to one of ordinary skill in the art, having the teachings of Yamanaka and Baker before him at the time the invention was made, to modify the method taught by Yamanaka to include the drift rate calculation taught by Baker, as drift rates are well know in the art and suitable for use in the system of Yamanaka [digital transmission system]. One of ordinary skill in the art would have been motivated to make such a combination as it provides an important parameter in processing signals in a digital transmission system [Baker: col.1, ll.12-32].

31. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka as applied to claim 1 above, and further in view of Yagita et al., US Patent 6081324, hereinafter Yagita, and Pennywitt et al., US Patent 6434562, hereinafter Pennywitt.

32. Yamanaka taught each and every limitation as discussed above. Yamanaka did not disclose using cameras in the industrial setting and the details of frame processing.

33. Yagita discloses the one or more devices that comprise a plurality of cameras [col.5, ll.31-57].

34. Pennywitt discloses the one or more devices adjust their timing by selectively reading an adjustable amount of extra data for each frame [col.17, ll.49-61].

35. It would have been obvious to one of ordinary skill in the art, having the teachings of Pennywitt, Yamanaka and Yagita before him at the time the invention was made, to modify the method taught by Yamanaka to include the monitoring cameras taught by Yagita and the frame

teachings of Pennywitt, in order to obtain the claimed apparatus. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to monitor foreign materials in an industrial setting such as Yamanaka's [Yagita: col.5, ll.31-57] while properly synchronizing data rates of the camera images [Pennywitt: col.17, ll.49-61].

36. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka as applied to claim 1 above, and further in view of Lisitsa et al., US Patent 6766407, hereinafter Lisitsa.

37. Yamanaka taught each and every limitation as discussed above. Yamanaka did not discuss the details of the bus.

38. Lisitsa discloses buses compliant with electronics standard IEEE 1394 [col.1, ll.59-65].

39. It would have been obvious to one of ordinary skill in the art, having the teachings of Yamanaka and Lisitsa before him at the time the invention was made, to modify the method taught by Yamanaka to include the IEEE 1394 taught by Baker, as IEEE 1394 is well know [prevalent] in the art and suitable for use in the system of Yamanaka [digital transmission system]. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to increase data transfer speeds [Lisitsar: col.1, ll.59-65].

40. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka as applied to claim 22 above.

41. Yamanaka discloses the apparatus wherein the first and second interfaces and the processing element are all located within a data processor [1] configured to process data received from the one or more devices on the first bus and the one or more devices on the second bus [fig.3a].

42. Yamanaka did not disclose explicitly the program memory is also located with the data processor. Examiner hereby takes Official Notice that it is well known in the art to have a program memory be located within some structure [data processor] along with the processing element.

43. It would have been obvious to one of ordinary skill in the art, having the teachings of Yamanaka before him at the time the invention was made, to have the program memory be located within the data processor, as it is extremely well known [most computer contains a program memory with associated processing element] and suitable for use with the system of Yamanaka. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to group essential elements in an area.

44. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka as applied to claim 22 above, and further in view of Yagita et al., US Patent 6081324, hereinafter Yagita.

45. Yamanaka taught each and every limitation as discussed above. Yamanaka did not disclose using cameras in the industrial setting.

46. Yagita discloses the one or more devices that comprise a plurality of cameras, wherein all of the pluralities of cameras are positioned to encircle an image area and to record images of the image area [col.5, ll.31-57].

47. It would have been obvious to one of ordinary skill in the art, having the teachings of Yamanaka and Yagita before him at the time the invention was made, to modify the method taught by Yamanaka to include the monitoring cameras taught by Yagita, in order to obtain the claimed apparatus. One of ordinary skill in the art would have been motivated to make such a

combination as it provides a way to monitor foreign materials in an industrial setting such as Yamanaka's [Yagita: col.5, ll.31-57].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tse Chen
July 28, 2006

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